Applicant also acknowledges receipt during the personal interview of copies of the cited references, Madisetti et al., "The Digital Signal Processing Handbook" (Chapters 18-24), Diniz, "Adaptive Filtering Algorithms and Practical Implementation"(pp. 1-70 including Chs. 1, 2 and first page of Ch. 3), and Benedetto, "Principles of Digital Transmission with Wireless Applications" (pp. 380-426), originally cited as respective citations "U", "V", "W" on the Form PTO-892 attached to the Final Action

Claims 1-13 stand rejected under 35 USC §102(b) in view of U.S. Patent No. 6,097,767 to Lo. This rejection is respectfully traversed.

As stressed during the interview, each of the independent claims specify: (1) supplying a prescribed initial set of equalizer settings to the digital ***feedforward*** equalizer, (2) comparing the equalized signal samples relative to a prescribed ***equalization*** threshold, and (3) ***selectively changing*** the supplied equalizer settings, based on the comparing step, ***until*** *the equalized signal samples reach the* ***prescribed equalization threshold***.

As described on page 3, lines 14-23 of the specification, the claimed supplying of initial settings to a digital ***feedforward*** equalizer enables the equalization of the retrieved signal samples, *regardless of whether other portions of the physical layer transceiver, such as the slicer, timing recovery unit, etc., have been able to begin recovery of information from the retrieved signal samples.* Moreover, ***the selective changing of the supplied equalizer settings until the equalized signal samples reach the prescribed equalization threshold*** enables the <u>independent initialization</u> of the digital feedforward equalizer, enabling other portions such as the timing recovery unit to begin recovery of information concurrent with the independent initialization of the digital feedforward equalizer.

As stressed during the interview, the claims do <u>not</u> specify a Decision Feedback Equalizer that includes <u>both</u> a feedforward equalizer <u>and</u> a feedback equalizer. Rather, the claims specify a feedforward equalizer, and ***selectively*** changing the supplied equalizer settings, ***until*** the equalizer signal samples reach the ***prescribed equalization threshold***.

Hence, the Examiner's characterization of Applicant's invention as a conventional Decision Feedback Equalizer based on Fig. 1 of the specification is improper because the

specification explicitly specifies at page 5, line 28 to page 6, line 13 that the feedback equalizer 26 is disabled during initialization, and that the receiver controller relies solely on the feedforward equalizer 28 and the equalizer controller 30 for initial equalization of the retrieved signal samples to a prescribed equalization threshold representing stable, equalized signal samples; the receiver controller 32 can *thereafter* enable the LMS algorithm using the feedback equalizer in combination with the feedforward equalizer.

Further, the Examiner's reliance of the feedback equalizer 26 of Figure 1 disregards the explicit claim language specifying a digital ***feedforward*** equalizer in combination with *selectively changing* the supplied equalizer settings until the equalized signal samples reach the prescribed ***equalization*** threshold. The prescribed ***equalization*** threshold represents "stable, equalized signal samples" such that the signals samples are equalized "to a sufficient equalized level to ensure that the slicer 22 can output reliable data" (page 6, lines 9-12) (see page 7, lines 25-33 and page 8, lines 20-27 for an exemplary implementation of the prescribed equalization threshold 66).

Hence, "claims are not to be read in a vacuum, and limitations therein are to be interpreted in light of the specification in giving them their 'broadest reasonable interpretation.'" MPEP § 2111.01 at 2100-37 (Rev. 1, Feb. 2000) (quoting In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983)(emphasis in original)). In this case, the claimed feedforward equalizer **cannot** be so broadly construed as to encompass the entire Decision Feedback Equalizer 20 of Fig. 1 that includes the feedback equalizer 26 (especially because it is disabled during initialization) and the feedforward equalizer 28. Such an interpretation would be inconsistent with the interpretation that those skilled in the art would reach, and hence would be unreasonable. Cf. In re Cortright, 49 USPQ2d 1464, 1468 (Fed. Cir. 1999).

The use of a digital ***feedforward*** equalizer, plus the ***selective changing*** of the supplied equalizer settings ***until the equalized signal samples reach the prescribed equalization threshold***, is neither disclosed nor suggested in the applied prior art.

Lo describes an equalization technique that relies on a closed loop system using a ***phase locked loop*** (PLL) to create a ***feedback system***: Lo explicitly describes that detecting a cable via

an "open loop" means "there is ***no feedback*** as to whether or not the equalizer setting selected by the cable length detector is the optimal equalizer setting to use to minimize jitter" (col. 2, lines 13-17).

Contrary to the assertions by the Examiner during the interview and in the Final Action, Lo provides **<u>no reference whatsoever</u>** to a ***feedforward*** equalizer, as claimed. Rather, Lo repeatedly refers to use of a "closed loop system". It is notoriously well known that the term "closed loop" refers to a **<u>feedback system</u>** (see, e.g., attached Exhibit A, "Introduction to Closed Loop Control", <u>http://www.netrino.com/Publications/Glossary/PID.html</u> at page 1: "Systems that utilize ***feedback*** are called ***closed-loop*** control systems."; USP 6,944,735 at col. 1, lines 58-63, attached as Exhibit B: "The precise location of the head is typically accomplished by incorporating a ***closed-loop*** electro-mechanical servo system with a dedicated servo region, or regions, used to provide continuous ***feedback*** to the system to maintain accurate positioning of the data heads."; USP 6,944,497 at col. 9, lines 6-8, attached as Exhibit C: "Microprocessor 200 executes an algorithm shown in FIGS. 8-12 in order to provide stimulation with ***closed loop feedback*** control.")

Further, the additional references cited by the Examiner (USP 6,870,881 and USP 5,517,527) distinguish between a ***feedforward*** filter and a ***feedback*** filter.

In contrast, Lo <u>never</u> provides any reference to "feedforward", but rather refers to use of a "***closed loop system,*** where the optimum equalizer setting is determined based on the amount of jitter <u>encountered by the phase locked loop</u> for ***each of the available equalizer settings***" (col. 2, lines 31-34).

Hence, the Examiner's assertion that Lo teaches a "***feedforward*** equalizer" is without foundation, and contrary to the explicit teachings of the reference.

Further, Lo fails to disclose "***selectively*** changing the supplied equalizer settings, based on the comparing step, ***until the equalized signal samples reach the prescribed equalization threshold***." As quoted above, Lo requires that **<u>each and every one of the available equalizer settings</u>** be analyzed to determine the corresponding jitter encountered by the phase locked loop.

In particular, Lo chooses the optimum equalizer setting based on determining the relative edge distribution for each equalizer setting, and identifying the corresponding relative edge distribution that demonstrates the ***minimum distribution of jitter*** :

> Hence, the normalized distribution result can be used to quantify the amount of jitter encountered by the phase locked loop ***for each equalizer setting***, enabling selection of the *optimum* equalizer setting having the *minimum* amount of jitter based on the corresponding normalized distribution result.
>
> (Col. 2, lines 62-67).
>
> Use of the correlation result from the phase locked loop enables the equalizer controller to determine the optimum equalizer setting using ***a closed-loop system***, where ***each equalizer setting is used*** to determine the corresponding normalized distribution result. Hence, the equalizer controller can effectively determine the *optimum* equalizer setting based on the corresponding normalized distribution result having the *minimum amount of jitter* induced in the phase locked loop.
>
> (Col. 3, lines 15-20).
>
> As described below, the equalizer controller 36 determines a normalized distribution result for ***each of the equalizer settings*** (eq_setting), and selects the optimum equalizer setting based on the corresponding normalized distribution result having the minimum value.
>
> FIG. 5 is a block diagram illustrating a state machine 70 in the equalizer controller 36 for determining the normalized distribution result for ***each of the predetermined equalizer settings***, and selecting the *optimum equalizer setting* according to an embodiment of the present invention.
>
> (Col. 5, lines 17-27).

Hence, Lo requires that each and every equalizer setting be evaluated for the corresponding jitter effect in the digital PLL 34 in order to determine the optimum equalizer setting.

Consequently, Lo neither discloses nor suggests the claimed "***selectively*** changing the supplied equalizer settings ... ***until*** the equalized signal samples ***reach*** the prescribed equalization threshold" because Lo requires changing the equalizer settings unequivocally (i.e.,

not "selectively") in order to determine the jitter effects for ***each of the equalizer settings*** in order to determine the ***optimum equalizer setting***.

Unlike independent claims 1 and 6, Lo requires evaluating <u>each and every</u> equalizer setting because Lo neither discloses nor suggests any "prescribed ***equalization*** threshold", as claimed. Rather, Lo relies on the closed loop system to determine the *optimum* equalizer setting providing the *minimum* jitter.

Independent claims 1 and 6, however, simply require ***selectively*** changing the supplied equalizer settings ***until*** the equalized signal samples reach the ***prescribed equalization threshold***.

The Examiner's assertion that Lo disclosed the claimed "prescribed ***equalization*** threshold" is unfounded. As stressed during the interview and the June 30, 2005 Amendment, the cited portion of Lo describes a <u>signal detection signal</u> that identifies whether <u>a cable is connected to the receiver</u>:

> [T]he equalizer 32 also outputs a reset signal and a detection signal (SIG_DET), which may be used by the equalizer 36 ***to detect an initialization condition*** in the equalizer controller 32, for example a reset state ***or a disconnect state***.
>
> (Col. 4, lines 1-5).
>
> As shown in FIG. 5, the state machine includes a link down state 72, executed by the equalizer controller 36 in response to reception of either a reset signal or ***deassertion of the signal detect signal (SIG_DET), indicating no signal is present on the medium 14***.
>
> (Col. 5, lines 33-37).
>
> The equalizer controller 36 remains the link down state 72 until reception of the detection signal (SIG_DET). The detection signal SEG_DET [sic] is a logical signal output by the equalizer 32 that indicates that signal transitions are occurring above a defined threshold, ***for example when a cable is connected to the receiver 30***.
>
> (Col. 5, line 66 to col. 6, line 4).

Hence, the "threshold" in Lo refers to a basic signal threshold to indicate that the a cable is connected to the receiver, and <u>not</u> the claimed "prescribed ***equalization*** threshold".

Also note that Fig. 1 of the subject application uses a "sig_det" signal that is output from the AGC 18 to the receiver controller 32, which is distingushable from the prescribed ***equalization*** threshold 66 that represents the threshold needed for "stable, equalized signal samples" such that the signals samples are equalized "to a sufficient equalized level to ensure that the slicer 22 can output reliable data" (page 6, lines 9-12) (see also page 7, lines 25-33 and page 8, lines 20-27).

Hence, the claimed "prescribed ***equalization*** threshold" cannot be so broadly construed as to remove the term "equalization": the specification distinguishes between simple signal detection (sig_det) and the ***equalization*** threshold. Hence, "claims are not to be read in a vacuum, and limitations therein are to be interpreted in light of the specification in giving them their 'broadest reasonable interpretation.'" MPEP § 2111.01 at 2100-37 (Rev. 1, Feb. 2000) (quoting In re Marosi, 218 USPQ 289, 292 (Fed. Cir. 1983)(emphasis in original)).

As apparent from the foregoing, Lo provides none of the claimed features of a ***feedforward*** equalizer, comparing the equalized signal samples relative to a ***prescribed equalization threshold***, or ***selectively changing*** the supplied equalizer settings ***until the equalized signal samples reach the prescribed equalization threshold***.

It is well settled that anticipation cannot be established based on a piecemeal application of the reference, where the Examiner picks and chooses isolated features of the reference in an attempt to synthesize the claimed invention. "Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 221 USPQ 481, 485 (Fed. Cir. 1984). Hence, it is not sufficient that a single prior art reference discloses each element that is claimed, but the reference also must disclose that the elements are arranged as in the claims under review. *In re Bond*, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990) (citing *Lindemann Maschinenfabrik GmbH*).

The Final Action provides a tortured interpretation of the claims and a piecemeal application of Lo in order to create a fiction that the claims are anticipated by Lo. As demonstrated above, the rejection should be withdrawn Lo fails to disclose each and every

element of the claim. See MPEP 2131. "The identical invention must be shown in as complete detail as is contained in the ... claim." Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). "Anticipation cannot be predicated on teachings in the reference which are vague or based on conjecture." Studiengesellschaft Kohle mbH v. Dart Industries, Inc., 549 F. Supp. 716, 216 USPQ 381 (D. Del. 1982), aff'd., 726 F.2d 724, 220 USPQ 841 (Fed. Cir. 1984).

For these and other reasons, the §102 rejection of independent claims 1 and 6 should be withdrawn.

In view of the above, it is believed this application is and condition for allowance, and such a Notice is respectfully solicited.

To the extent necessary, Applicant petitions for an extension of time under 37 C.F.R. 1.136. Please charge any shortage in fees due in connection with the filing of this paper, including any missing or insufficient fees under 37 C.F.R. 1.17(a), to Deposit Account No. 50-0687, under Order No. 95-525, and please credit any excess fees to such deposit account.

Respectfully submitted,
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Registration No. 34,035

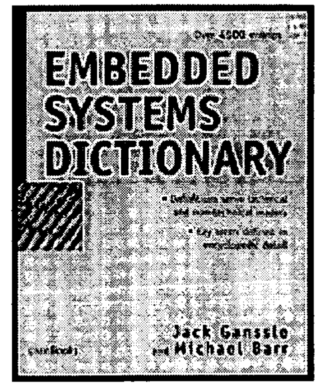
Customer No. 20736
Date: September 14, 2005

Michael Barr's Embedded Systems Glossary

Up to Glossary

Introduction to Closed-Loop Control

by Michael Barr



Most control systems utilize feedback in some manner. Here's a look at several fundamental feedback mechanisms, culminating in a description of a basic PID controller.

Many real-time embedded systems make control decisions. These decisions are usually made by software and based on feedback from the hardware under its control (termed the *plant*). Such feedback commonly takes the form of an analog sensor that can be read via an A/D converter. A sample from the sensor may represent position, voltage, temperature, or any other appropriate parameter. Each sample provides the software with additional information upon which to base its control decisions.

Closing the loop

Systems that utilize feedback are called *closed-loop* control systems. The feedback is used to make decisions about changes to the control signal that drives the plant. An *open-loop* control system doesn't have or doesn't use feedback.

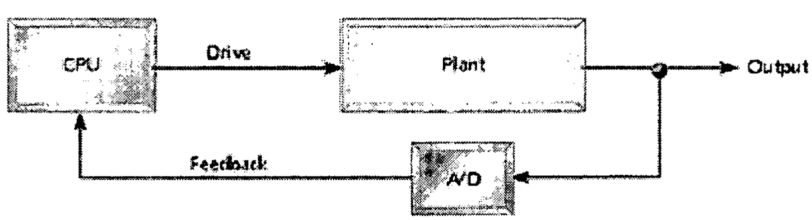


Figure 1. A closed-loop control system

A basic closed-loop control system is shown in Figure 1. This figure can describe a variety of control systems, including those driving elevators, thermostats, and cruise control.

Closed-loop control systems typically operate at a fixed frequency. The frequency of changes to the *drive signal* is usually the same as the sampling rate, and certainly not any faster. After reading each new sample from the sensor, the software reacts to the plant's changed state by recalculating and adjusting the drive signal. The plant responds to this change, another sample is taken, and the cycle repeats. Eventually, the plant should reach the desired state and the software will cease making changes.

Exhibit A
Response After Final filed September 14, 2005, Appln. No. 10/002,185

METHOD AND APPARATUS FOR DISC DRIVE DATA SECURITY USING A DEFECT LIST

CROSS-REFERENCE TO A RELATED APPLICATION

This application is a continuation of U.S. Pat Ser. No. 09/795,877, filed Feb. 28, 2001 now U.S. Pat. No. 6,782,458 in the name of Gayle L. Noble.

This invention is based on U.S. Provisional Patent Application Ser. No. 60/185,257 filed Feb. 28, 2000, entitled Use Defect Lists To Hide Copy-Protected Data filed in the name of Gayle L. Noble. The priority of this provisional application is hereby claimed.

U.S. Patent application entitled "Method and Apparatus for Disc Drive Data Security Using A Servo Wedge", Ser. No. 09/796,197 filed on Feb. 28, 2001 filed in the name of Gayle L. Noble is hereby incorporated herein by reference in its entirety.

U.S. Patent application entitled "Method and Apparatus for Disc Drive Data Security Using Physical Location", Ser. No. 09/795,623 filed on Feb. 28, 2001 filed in the name of Gayle L. Noble is hereby incorporated herein by reference in its entirety.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention generally relates to storing and retrieving copy-protected data on a disc drive.

2. Background of the Related Art

With the advent of the recording and playing of digital data, the need to store copy-protected data on disc drives becomes increasingly a necessity. Digital data is rapidly becoming the standard format by which industries, such as the entertainment industry, record and play multimedia. Paid for programming available to the public such as movies, sound tracks, music recordings, and the like, are increasing in demand. With digital recording, the public has more options than ever to listen to and/or record digital audio and video with unparalleled recording and playback quality.

One exemplary storage system being used more frequently to store digital multi-media is a computer controlled disc-based storage drive, e.g., a disc drive. Disc drives are capable of storing large amounts of digital data in a relatively small area. Disc drives store information on one or more recording media. The recording media conventionally take the form of a circular storage disc, e.g., media, having a plurality of recording tracks. Conventional disc drives include a plurality of the storage discs, vertically aligned, and each with at least on magnetic head for reading or writing information to the media. Typically, the magnetic head is attached to a positioner arm assembly that uses servomotors, such as stepper motors, to align the magnetic head above the disc. The location of the magnetic head is typically determined by a disc controller that is given the position of a data area on the disc to read or write data. The precise location of the head is typically accomplished by incorporating a closed-loop electro-mechanical servo system with a dedicated servo region, or regions, used to provide continuous feedback to the system to maintain accurate positioning of the data heads.

Unfortunately, due to the high quality of the data and the fact that the data stored on digital storage systems, such as disc drives, is often unprotected and easily copied, the copying and selling of unauthorized copies of digitally recorded material is on the rise. Consider the case where a paid for program such as an audio file is downloaded via a network of computers such as the Internet, to a disc drive for play by a client who has paid for the file. Often, the file may be copied to another storage media or to another disc drive for use by another user unless copy protection is used. This often referred to as "pirating" a copy of the file. Additionally, the file may be repackaged and sold by others for profit without permission, often called "software piracy". In addition, the files may be shared by other users by playing from the owner's computer allowing the end user the benefit of the file without purchasing the file from the owner.

Conventional digital copy-protection schemes involve techniques such as registration, encryption, digital watermarking, 5C content, and the like. For example, software copy protection schemes often involve the use of copy-protection techniques that require issuing registration numbers with each package. When you install the software, you must enter the registration number. This technique does not prevent all unauthorized copying, but it limits it. In addition, users may not be able to obtain updates to a software product unless they own the original diskettes and documentation. Unfortunately, the user may forget, or may have difficulty in registering the software and may become frustrated if the software stops working and/or working properly.

For conventional multimedia, data stored on optical surfaces such as found on a digital versatile disc (DVD) is often copy protected. For example, the digital-video format includes a content scrambling system (CSS) to prevent users from copying discs. The DVD system may also use key based techniques such as the 5C technique that has software keys that expire after use. Unfortunately, this means that today's DVD players may not be able to play DVD-video discs without a software and/or hardware upgrade to decode the encrypted and/or keyed data even though the use may be authorized.

Another issue with conventional copy protection is that of making backups of the data. For example, a user may have a computer that they need to backup the data, conventional encryption techniques often require that a hardware and/or specific software key(s) be used before the data can be successfully copied. Unfortunately, the user may not have the correct hardware or software key to allow the transfer of the data and may become frustrated.

Furthermore, most conventional copy protection techniques such as CSS are defeated over time causing the digital-video and software industry to constantly upgrade the hardware, and/or software techniques to combat the unauthorized copying. The constant upgrading and development of protection techniques that are eventually exposed and defeated causes an increase in the cost of the product as well as possible incompatibility issues with existing systems.

Thus, what is needed is a method that allows the recording and playing of copy protected material to the user without the ability to copy the data or use the data in an unauthorized manner without affecting the compatibility of the storage device to operate with non-copy protected data.

SUMMARY OF THE INVENTION

The present invention generally provides a method and apparatus for storing and retrieving copy protected data within storage devices such as a disc drive. One aspect of the present invention provides a method for writing on a disc drive data to be copy protected including the steps of providing data to be copy protected, then copying a first data

Exhibit B
Response After Final filed September 14, 2005, Appln. No. 10/002,185

pulse width control provides an enabling pulse of duration equal to the pulse width via a conductor. Pulses with the selected characteristics are then delivered from signal generator **16** through cable **22** and lead **22A** to the target locations of a brain B.

Microprocessor **200** executes an algorithm shown in FIGS. 8–12 in order to provide stimulation with closed loop feedback control. At the time the stimulation signal generator **16** or alternative device in which the stimulation and infusion functions are combined is implanted, the clinician programs certain key parameters into the memory of the implanted device via telemetry. These parameters may be updated subsequently as needed. Step **400** in FIG. **8** indicates the process of first choosing whether the neural activity at the stimulation site is to be blocked or facilitated (step **400(1)**) and whether the sensor location is one for which an increase in the neural activity at that location is equivalent to an increase in neural activity at the stimulation target or vice versa (step **400(2)**). Next the clinician must program the range of release for pulse width (step **400(3)**), amplitude (step **400(4)**) and frequency (step **400(5)**) which signal generator **16** may use to optimize the therapy. The clinician may also choose the order in which the parameter changes are made (step **400(6)**). Alternatively, the clinician may elect to use default values.

The algorithm for selecting parameters is different depending on whether the clinician has chosen to block the neural activity at the stimulation target or facilitate the neural activity. FIG. **8** details steps of the algorithm to make parameter changes.

The algorithm uses the clinician programmed indication of whether the neurons at the particular location of the stimulating electrode are to be facilitated or blocked in order to decide which path of the parameter selection algorithm to follow (step **420**, FIG. **9**). If the neuronal activity is to be blocked, signal generator **16** first reads the feedback sensor **130** in step **421**. If the sensor values indicate a likelihood that the activity in the neurons is too high (step **450**), for instance, if speech processing software detects a speech pattern likely to correspond to stuttering, the algorithm in this embodiment first increases the frequency of stimulation in step **424** provided this increase does not exceed the preset maximum value set by the physician. Step **423** checks for this condition. If the frequency parameter is not at the maximum, the algorithm returns to step **421** through path **421A** to monitor the feed back signal from sensor **130**.

If the frequency parameter is at the maximum, the algorithm next increases the pulse width in step **426** (FIG. **10**), again with the condition that this parameter has not exceeded the maximum value as checked for in step **451** through path **423A**. Not having reached maximum pulse width, the algorithm returns to step **421** to monitor the feedback signal from sensor **130**. Should the maximum pulse width have been reached, the algorithm next increases amplitude in a like manner as shown in steps **427** and **428**. In the event that all parameters reach the maximum, a notification message is set in step **429** to be sent by telemetry to the clinician indicating that device **16** is unable to reduce neural activity to the desired level.

If, on the other hand, the stimulation electrode is placed in a location which the clinician would like to activate in order to alleviate stuttering, the algorithm would follow a different sequence of events. In the preferred embodiment, the frequency parameter would be fixed at a value chosen by the clinician to facilitate neuronal activity in step **430** (FIG. **11**) through path **420A**. In steps **431** and **432** the algorithm uses the values of the feedback sensor to determine if neuronal activity is being adequately controlled. In this case, inadequate control indicates that the neuronal activity of the stimulation target is too low. Neuronal activity is increased by first increasing stimulation amplitude (step **434**) provided it doesn't exceed the programmed maximum value checked for in step **433**. When maximum amplitude is reached, the algorithm increases pulse width to its maximum value in steps **435** and **436** (FIG. **12**). A lack of adequate alteration of the symptoms of the neurological disorder, even though maximum parameters are used, is indicated to the clinician in step **437**. After steps **434**, **436** and **437**, the algorithm returns to step **431** through path **431A**, and the feedback sensor is read again.

It is desirable to reduce parameter values to the minimum level needed to establish the appropriate level of neuronal activity in, for example, the target brain nucleus. Superimposed on the algorithm just described is an additional algorithm to readjust all the parameter levels downward as far as possible. In FIG. **8**, steps **410** through **415** constitute the method to do this. When parameters are changed, a time is reset in step **415**. If there is no need to change any stimulus parameters before the timer has counted out, then it may be possible due to changes in neuronal activity to reduce the parameter values and still maintain appropriate levels of neuronal activity in the target neurons. At the end of the programmed time interval, signal generator **16** tries reducing a parameter in step **413** to determine if control is maintained. If it is, the various parameter values will be ratcheted down until such time as the sensor values again indicate a need to increase them. While the algorithms in FIGS. **8–12** follow the order of parameter selection indicated, other sequences may be programmed by the clinician.

While the invention has been described with respect to specific examples including presently preferred modes of carrying out the invention, those skilled in the art will appreciate that there are numerous variations and permutations of the above described systems and techniques that fall within the spirit and scope of the invention as set forth in the appended claims and their equivalents.

I claim:

1. A system for therapeutically treating stuttering in a patient comprising:

a signal generator;

at least one implantable lead, coupled to the signal generator, for delivering electrical stimulation to at least one predetermined site of the patient's brain;

a sensor, located near the patient's vocal folds, for generating a signal responsive to activity of the patient's speech-producing muscles;

a controller that performs speech-recognition processing on the signal from the sensor to detect stuttering and that adjusts at least one stimulation parameter in response to detecting stuttering.

2. The system of claim **1**, wherein the controller detects when the patient starts speaking and starts the electrical stimulation in response to detecting that the patient has started to speak.

3. The system of claim **2**, wherein the controller stops the electrical stimulation a predetermined amount of time after the patient has started to speak.

4. The system of claim **1**, wherein the sensor is an electromyographic sensor.

5. The system of claim **1**, wherein the sensor is an electroglottographic sensor.

6. The system of claim **1**, wherein the sensor is a microphone.

Exhibit C

Response After Final filed September 14, 2005, Appln. No. 10/002,185